

Date: Wednesday, 28/01/2009 4:59:45 PM
 User: Julie Dawson

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: BLADE
Job Number	: 45320		
Estimate Number	: 10327		
P.O. Number	:	Part Number	: D2741
This Issue	: 28/01/2009 S.O. No. :	Drawing Number	: D2741 REV C
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: // Type : MACHINED PARTS	Drawing Revision	: C
Previous Run	: 44031	Material	:
Written By	:	Due Date	: 10/02/2009 Qty: 40 Um: Each
Checked & Approved By	: <u>JLD 09.01.29</u>		
Comment	Est Rev: D 00.11.15 Removed P/O turning - in house processEC Est Rev: E 06-03-20 As Per Rev C JLM Est Rev: F 06.04.20 Added grinding after heat treating EC		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	M4130NB0500X03000	4130 Bar 0.500 x 3.00
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Comment: Qty.: 1.2118 f(s)/Unit Total: 48.4722 f(s)
 4130 BAR 0.5 x 3.0"
 Material: 4130 steel bar 0.50" x 3.00"

Batch: M110336 X 20
M106274 X 20

JLD 09/01/31

2.0	BAND SAW	BAND SAW
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Comment: BAND SAW
 Cut blanks 13.850" long +0.063" -0.000"

JLD 09/01/31

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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Comment: HAAS CNC VERTICAL MACHINING #1
 1-Machine per folio FA108

mmf 09/02/06 / SP 09/04/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 28/01/2009 4:59:45 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 45320

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description :

4.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



mmf 09/02/06



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

J.L 09/02/10

6.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Deburr
2-Bend per Dwg D2741

8 09/02/18 (40)

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

209.02.18 (40)

8.0

OUTSIDE SERV.30

OUTSIDE SERVICES-MACH



Comment: Sub-Contracting PURCHASING
Issue P/O: 9215
Harden material as per Dwg D2741
Min. Ultimate Tensile Strength = 152 ksi (34-40 HRC)
Min. Yield Tensile Strength = 141 ksi
Test report or Certification required

CL 09/02/18 (40)

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1
Receive and Inspect for transit damage
Ensure Test report or Certification attached

14/3/17 (40)

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/03/18 (40) center

11.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-Pass in deburring machine
2-Grind off edges

2/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 28/01/2009 4:59:46 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BLADE

Job Number: 45320

Part Number: D2741

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



11/09-03-23 (X40)
* wash off oil *



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

START TIME:

14:35

OVEN TEMPERATURE:

400°

FINISH TIME:

15:05

CMO/Ed.

09/03/24

(X40)

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

15/09-03-25 (40)

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST 466

CL09/03/25

(40)

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/03/25

Job Completion



MF
09-03-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector



Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

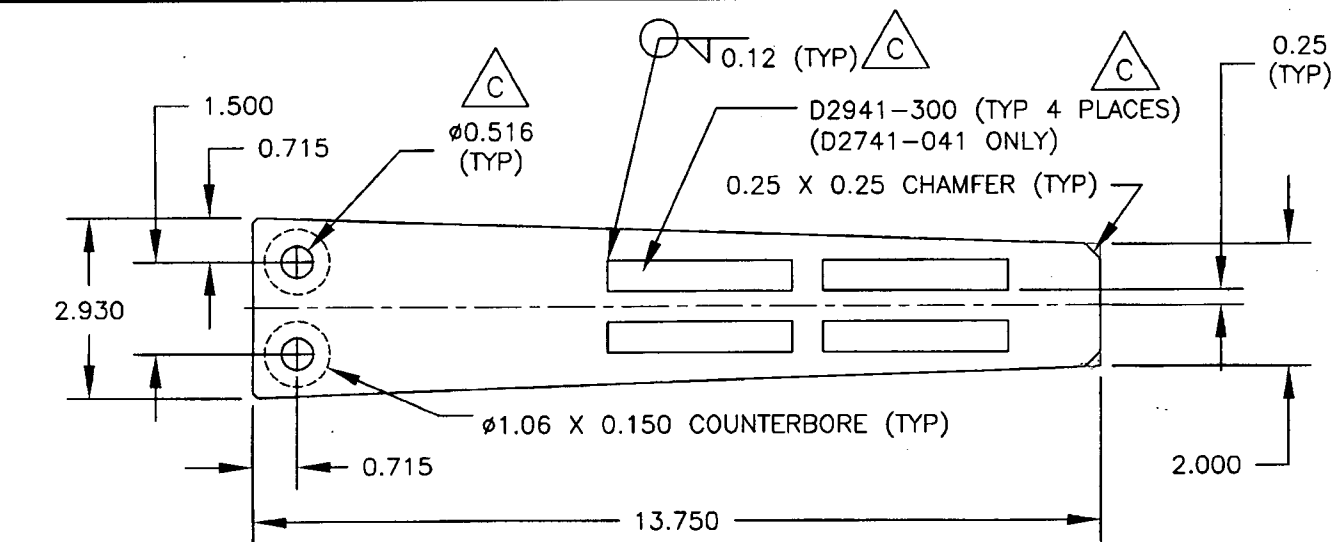
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

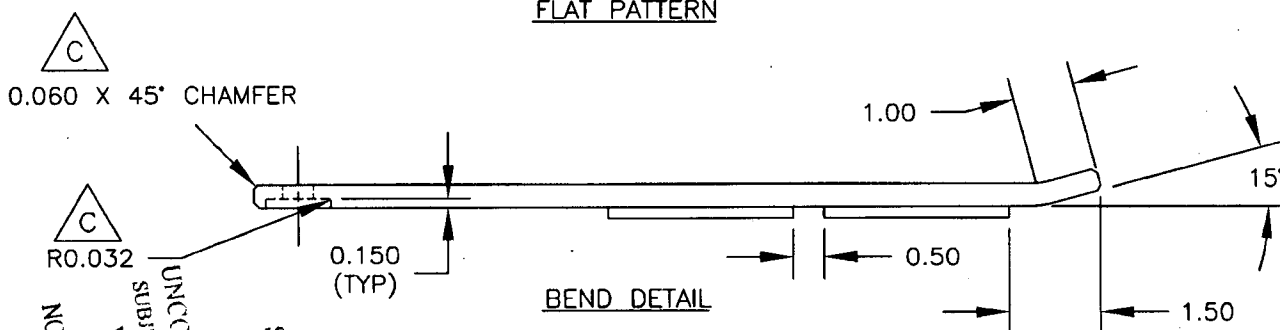
NOTE: Date & initial all entries

RELEASED
26-02-07

DESIGN	974	DRAWN BY	974	DART AEROSPACE USA, INC.		REV. C
CHECKED		APPROVED		DRAWING NO.	D2741	SHEET 1 OF 1
DATE	06.01.12			TITLE	BLADE	
A	98.04.16			NEW ISSUE		
B	98.09.01			CHANGE C'SINK TO C'BORE		
C	06.01.12			LARGER HOLE,ADD RADIUS AND CHAMFER ADD -041/-043 OPTIONS		



FLAT PATTERN



BEND DETAIL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *15300*
D2741 BLADE

- 1) MATERIAL: AISI 4130 STEEL 0.375 THICK
MIN. ULTIMATE TENSILE STRENGTH = 152 ksi (34-40 HRC)
MIN. YIELD TENSILE STRENGTH = 141 ksi
- 2) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.030 TO 0.060
- 6) TO MAKE D2741-041, WELD D2941-300 (4) AS SHOWN ABOVE.
REMOVE POWDER COAT FROM SURFACE OF D2941-300
- 7) TO MAKE D2741-043, WELD 7560 HARDCOAT ROD INSTEAD OF D2941-300

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Rapport d'inspection

Order	Load
146058	1

Customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

Shipped To:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

1

Customer PO / PO du Client	Customer Shipper No.	Material Type / Matenal	Mat'l Heat Code	Lot Number
8215		4130		

PROCESSING SPECIFICATIONS

SEL HARDEN

HARDEN AND TEMPER

SAE AMS 2759/1 REV.D

Requirement	Specified	Tests Performed	Test Results
HARDNESS	34 - 40 HRC	40	38 - 40 HRC
TENSILE (KSI)	152 - 182 KSI		171 - 182 KSI

Quantity	Weight	Part Number / Part Description
40	138	D2741 BLADE B45320 1 PAL=2 B C

COMMENTS

INSPECTOR:

DATE: 2009-03-15



METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
146058	1	30204

Shipped Complete

Customer

215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
8215		4130	2009/2/19	EPIC

Quantity	Part No. / Part Name / Part Description	Pounds
40	D2741 BLADE B45320 1 PAL=2 B.C	138,

Container Type	# Of Containers	Container Comments
	1	1 PAL=2 B.C

PACKING	
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Quantity Shipped: 40
Pounds Shipped: 138,00
Quantity Remaining: 0
Pounds Remaining: 0,00

Quantity Shipped:	40
Pounds Shipped:	138,00

Signature: _____

Date: _____

Shipped ON: 2009/03/16



METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certification

Order	Load
146058	1

Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

Shipped To:

DART AEROSPACE
1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

Customer PO / PO du Client	Customer Shipper No.	Material Type / Material	Mat'l Heat Code	Lot Number
8215		4130		

PROCESSING SPECIFICATIONS

SEL HARDEN

HARDEN AND TEMPER

SAE AMS 2759/1 REV.D

Requirement	Specified	Tests Performed	Test Results
HARDNESS	34 - 40 HRC	40	38 - 40 HRC
TENSILE (KSI)	152 - 182 KSI		171 - 182 KSI

S
02/03/12

Quantity	Weight	Part Number / Part Description
40	138	D2741 BLADE B45320 1 PAL=2 B.C

Operation	Specified Temp	Specified Soak Time	Atmosphere	Carbon Potential	Q-Media Q-Temp	Furnace# Load #	Start Date	Time In	Time Out	Date Complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1000	1:00 1:30	air			133	02-25-09	16:20	17:35	02-25-09
4.00 SEL HARDE	1575	0:40	SEL		BRINE	107	02-25-09	17:35	18:35	02-25-09
5.00 WASH	150	0:30	soap			150	02-25-09	18:55	19:30	02-25-09
6.00 SNAP TEMF	400	2:00	air			639	02-25-09	19:30	21:35	02-25-09
7.00 DIST INSP										
8.00 TEMPER	875 +/-10°F	4 hrs	air			610	03-04-09	19:35	1:05	03-05-09

SCOR INC.
BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Certification

Order	Load
146058	1

Customer **215**
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

Shipped To:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

Operation	Specified Temp	Specified Soak Time	Atmosphere	Carbon Potential	Q-Media Q-Temp	Furnace# Load #	Start Date	Time In	Time Out	Date Complete
9.00 TEMPER 2	900	4 hrs	air			611	03-13-09	1:00	5:55	03-13-09
10.00 HARDN INS										
11.00 SANDBLAS			Sablage							
12.00 HUILAGE			huile							
13.00 FINAL INSP										03-15-09

COMMENTS

APPROVED BY:

Jonathan Bozon



DATE: 2009-03-16

We certify that all the information on this report is exact and in accordance with the order requirements. / Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client.